

Qualitative Interview Evaluation of COVID-19 Predictive Model Adoption for Hospital Resource Planning



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BACKGROUND

Predictive models for coronavirus planning to support medical decision making entered the literature at a rapid pace. A primary research focus of existing COVID-19 predictive models is on public health measures to flatten the curve. Novel research approaches involve assessing whether and how COVID-19 predictive models were adopted by health systems, hospitals, or regional health leaders for strategic care and hospital resource planning including intensive care unit (ICU) beds, ventilators, personal protective equipment (PPE) and staffing.

Research will enhance knowledge about the relationship between predictive models and strategic planning of hospital resources during a disease outbreak.

OBJECTIVES

Study aims to answer three fundamental questions:

- 1) How health care organizations incorporated COVID-19 predictive modeling into strategic care and hospital resource planning?
- 2) What visualization features from COVID-19 predictive modeling are effective for planning?
- 3) What planning challenges are addressed by COVID-19 predictive models and which ones remain?

METHODS

Research follows a qualitative interview design.

Inclusion Criteria:

- ❖ Analysts, managers, strategic planners, project managers, clinical staff and informatics leaders involved in hospital planning activities

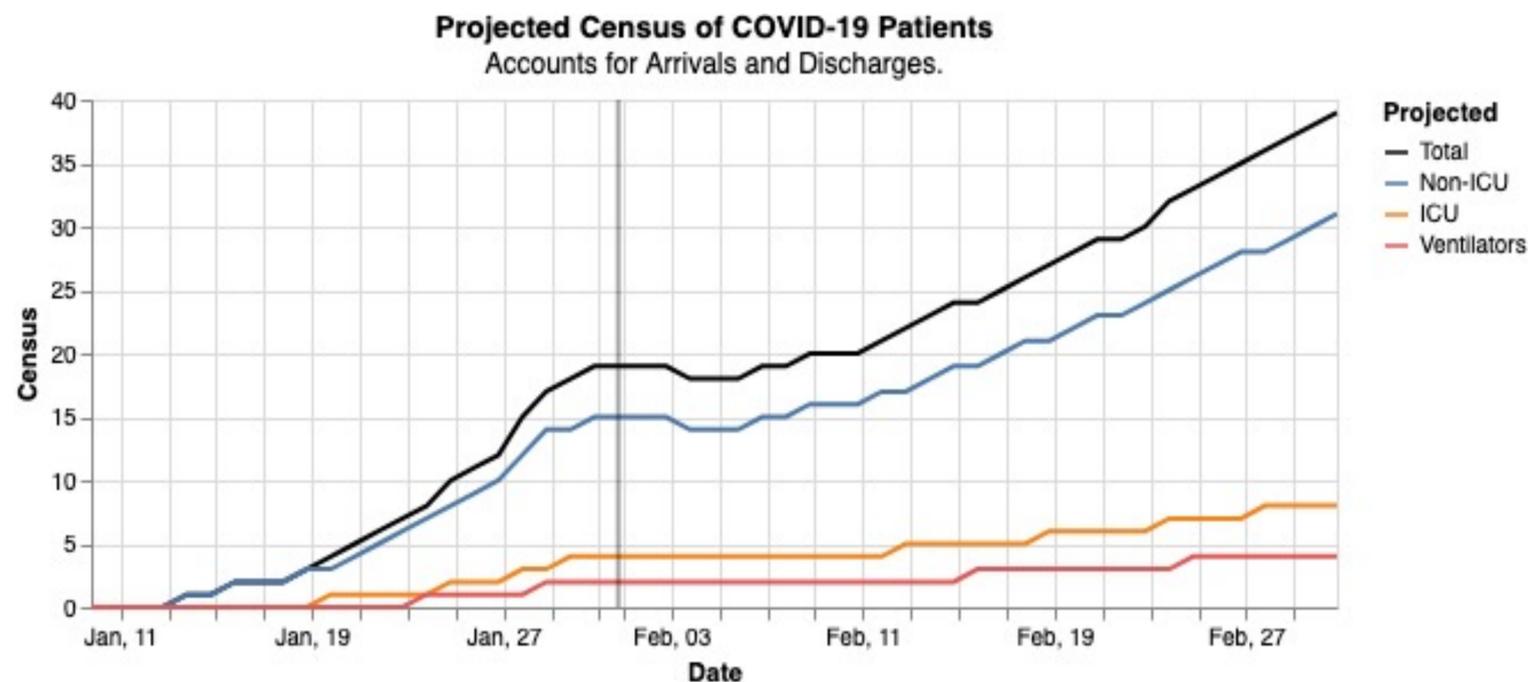
Recruitment:

- ❖ Postings on University of Victoria and Digital Health Canada listservs.
- ❖ Notification for participation on LinkedIn.

Data Collection:

- ❖ SurveyMonkey questionnaire for participant demographics. Semi-structured interview recordings transcribed using built-in natural language processing from Zoom. Text data analyzed using qualitative analytics software.
- ❖ Sample visualization predicting COVID-19 admissions, ICU census, PPE needs and staffing shown to participants to gather feedback about utility (see example below).

Sample Visualization from University of Pennsylvania COVID-19 Hospital Impact Model for Epidemics (CHIME) using Susceptible, Infected, Recovered (SIR) Model



SIGNIFICANCE

Existing research gaps are in understanding how organizations adopted COVID-19 predictive models to formulate plans for strategic care and resource deployment. Lessons learned will enhance the application of predictive models for strategic planning. **Strengths include direct feedback from health care organizations on COVID-19 predictive model applications. A limitation of a small self-identified interview study is the potential for selection bias.**

ACKNOWLEDGEMENTS

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